

Nahid  
Zoueshtiagh/R9/USEPA/US  
03/08/2006 10:54 AM

To Joseph Lapka/R9/USEPA/US@EPA  
cc  
bcc  
Subject Emission Summaries FSRU Offshore Project

----- Forwarded by Nahid Zoueshtiagh/R9/USEPA/US on 03/08/2006 10:53 AM -----



KWright@entrix.com  
06/11/2003 12:01 PM

To Nahid Zoueshtiagh/R9/USEPA/US@EPA  
cc  
Subject Re: Emission Summaries FSRU Offshore Project

Nahid:

Thank you for the update on EPA's review of our project. Per our telephone conversation this morning, I have attached revised emission summaries for the project. The revisions are a result of upgrading the main engines and the dual fired backup engine, the addition of a dedicated emergency back-up engine, and an increase in the size of the diesel tank. I have also attached an expanded region map for the project.

Should you have any questions concerning these attachments, please contact me.

Kevin Wright  
Air Resources  
ENTRIX, Inc.  
TEL 805-477-5007



FAX 805-658-0612 FSRU Controlled & Uncontrolled summary.xls fig3.3-1\_SCACoastRegnCabrPt\_04\_ka\_rev.pdf

## FSRU Controlled Summary

EMITTENT NAME	Tons per Year (Controlled)						
	Main Gens	Backup Gen	Vaporizers	Emergency	Life Boat	Diesel Tank	Total
Nitrogen Oxides (as NO <sub>2</sub> )	21.0	6.3	38.6	9.8	0.06	-	75.7
Reactive Organic Compounds (ROC) as CH <sub>4</sub>	21.0	0.5	1.4	1.4	0.00	0.030	24.3
Carbon Monoxide (CO)	28.0	0.7	29.4	12.1	0.01	-	70.2
Sulfur Dioxide (SO <sub>2</sub> )	0.062	0.004	0.130	0.0	0.000	-	0.20
Particulates (as PM <sub>10</sub> )	6.3	0.4	4.0	0.5	0.00	-	11.2
Carbon Dioxide (CO <sub>2</sub> )	45,291	694	90,481	795.6	2.32	-	137,263
Ammonia Slip (NH <sub>3</sub> )	5.2	0.1	-	-	-	-	5.2

EMITTENT NAME	Emission Rates (Controlled)						
	Main Gens	Backup Gen	Backup Gen	Vaporizers	Vaporizers	Emergency	Life Boat
	g/BHP-hr	g/BHP-hr gas	g/BHP-hr D2	ppmv @ 3%	lb/mmBTU	g/BHP-hr	g/BHP-hr
Nitrogen Oxides (as NO <sub>2</sub> )	0.150	0.150	6.900	40.0	0.0486	6.90	14.00
Reactive Organic Compounds (ROC) as CH <sub>4</sub>	0.150	0.150	0.385	4.1	0.0017	1.00	0.83
Carbon Monoxide (CO)	0.200	0.200	0.607	50.0	0.0370	8.50	2.54
Sulfur Dioxide (SO <sub>2</sub> )	0.0004	0.0005	0.0044	0.1	0.0002	0.01	0.01
Particulates (as PM <sub>10</sub> )	0.045	0.045	0.380	0.0034	0.0050	0.38	0.84
Carbon Dioxide (CO <sub>2</sub> )	323.469	327.344	454.608	98,000	113.8128	560.64	560.64
Ammonia Slip (NH <sub>3</sub> )	0.037						

### Device Notes:

Main generators operating at 100% load for 12,800 total machine hours per year, 2 of 3 devices running at any one time, gas fuel

Backup generator operating at 100% load for 200 machine hours per year, dual fuel, 100 hours on gas, 100 hours on diesel fuel

Vaporizers operating at 100% load for 8,000 machine hours per year each, 5 devices, 40,000 machine hours total, gas fuel

Emergency fire pump and generator operating at 100% load for 200 machine hours each per year, diesel fuel

Life Boat exercising at 100% load for 50 machine hours per year each, 1 device, diesel fuel

Diesel Storage Tank, 145,000 gallon capacity, throughput based on diesel fuel usage defined above for applicable devices

## FSRU Uncontrolled Summary

EMITTENT NAME	Tons per Year (Uncontrolled)						
	Main Gens	Backup Gen	Vaporizers	Emergency	Life Boat	Diesel Tank	Total
Nitrogen Oxides (as NO <sub>2</sub> )	126.1	10.3	38.6	9.8	0.06	-	<b>184.9</b>
Reactive Organic Compounds (ROC) as CH <sub>4</sub>	73.1	1.2	1.4	1.4	0.00	0.030	<b>77.1</b>
Carbon Monoxide (CO)	221.7	1.9	29.4	12.1	0.01	-	<b>265.1</b>
Sulfur Dioxide (SO <sub>2</sub> )	0.062	0.004	0.130	0.0	0.000	-	<b>0.20</b>
Particulates (as PM <sub>10</sub> )	6.3	0.4	4.0	0.5	0.00	-	<b>11.2</b>
Carbon Dioxide (CO <sub>2</sub> )	45,291	694	90,481	795.6	2.32	-	<b>137,263</b>
Ammonia Slip (NH <sub>3</sub> )	-	-	-	-	-	-	-

EMITTENT NAME	Emission Rates (Uncontrolled)						
	Main Gens	Backup Gen	Backup Gen	Vaporizers	Vaporizers	Emergency	Life Boat
	g/BHP-hr	g/BHP-hr gas	g/BHP-hr D2	ppmv @ 3%	lb/mmBTU	g/BHP-hr	g/BHP-hr
Nitrogen Oxides (as NO <sub>2</sub> )	0.900	0.911	10.746	40.0	0.0486	6.90	14.00
Reactive Organic Compounds (ROC) as CH <sub>4</sub>	0.522	0.916	0.385	4.1	0.0017	1.00	0.83
Carbon Monoxide (CO)	1.583	1.541	0.607	50.0	0.0370	8.50	2.54
Sulfur Dioxide (SO <sub>2</sub> )	0.0004	0.0005	0.0044	0.1	0.0002	0.01	0.01
Particulates (as PM <sub>10</sub> )	0.045	0.045	0.380	0.0034	0.0050	0.38	0.84
Carbon Dioxide (CO <sub>2</sub> )	323.469	327.344	454.608	98,000	113.8128	560.64	560.64
Ammonia Slip (NH <sub>3</sub> )	-						

### Device Notes:

Main generators operating at 100% load for 12,800 total machine hours per year, 2 of 3 devices running at any one time, gas fuel

Backup generator operating at 100% load for 200 machine hours per year, dual fuel, 100 hours on gas, 100 hours on diesel fuel

Vaporizers operating at 100% load for 8,000 machine hours per year each, 5 devices, 40,000 machine hours total, gas fuel

Emergency fire pump and generator operating at 100% load for 200 machine hours each per year, diesel fuel

Life Boat exercising at 100% load for 50 machine hours per year each, 1 device, diesel fuel

Diesel Storage Tank, 145,000 gallon capacity, throughput based on diesel fuel usage defined above for applicable devices

